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**Towards a Cashless Society: Use of Mobile Payment among
Millennials in Makati City, Philippines**

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Abstract

Cashless transactions using mobile payment methods are becoming more popular in several countries, including the Philippines, due to increased broadband internet penetration, access to more products and services, and convenience.

This study is focused on determining the intention of millennials in Makati City, Philippines, to continue using mobile payments. Using the Unified Theory of Acceptance and Use of Technology (UTAUT), the relationship of performance expectancy, effort expectancy, social influence, and facilitating conditions on the actual usage of mobile payment systems and how the actual usage affects the intention to continue the usage of mobile payments were analyzed.

A total of 386 millennials from Makati City, Philippines, have responded to the survey through an online Google form for data collection. Using PLS-SEM, the results showed that performance expectancy, social influence, and facilitating conditions significantly influence the actual usage of mobile payment systems, while effort expectancy showed no significant

relationship with the actual usage. Furthermore, the actual usage has a significant association with millennials' intention to continue using mobile payment systems.

The study can be used in financial and marketing strategies to understand and attract more mobile payment consumers. This is also relevant to the decision-making and policy formulating of the government in strengthening the mobile channels in both private and government institutions in the Philippines.

Future researchers can add additional depth to the study by broadening the scope to nationwide respondents. Additionally, it will be interesting to see how millennials use technology differently in rural and urban areas. Centennials, Baby Boomers, Gen Z and Gen X can also be examined in the same way Millennials were investigated.

Keywords: *performance expectancy, effort expectancy, social influence, facilitating conditions, mobile payment*

Introduction

Globally, cashless transactions were on the rise. According to research published in 2019, cards were used to make over half of all payments in the United Kingdom (UK Finance, 2020). Countries like Finland and Sweden are in the same boat. Sweden is recognized as the poster child for cashless societies, with plans to become the first cashless society in the world by March 2023. (Arvidsson, Segendorf, and Hedman 2017). Across Asia, China and South Korea are cashless societies. A survey says South Koreans are increasingly going cashless as more people rely on credit cards and digital payment tools (Bank of Korea, 2019). Around 83 percent of all payments in China were made via mobile (Walk the Chat and Ipsos, 2017). These countries share high levels of digital literacy, moderate levels of financial inequality, and almost

ubiquitous access to smartphones and mobile data. Furthermore, nearly all adults in South Korea and Sweden are banked (Srouji, 2020). However, According to the study by Ogundile (2013), internet penetration is low in most homes due to the high cost of accessing the Internet, which slows the adoption of e-banking products. On the other hand, Yuvaraj (2018) showed that with the increase in available networks, digital payments are quicker without any inconvenience. The increase in cashless payment is also evident after broadband facilities were provided in rural areas in India (Shah A. et al., 2016). They are expanding the range of internet connectivity made mobile banking available to users (Mellon, 2014).

With the increase of mobile technology in today's world (Hwang et al., 2007; Schierz et al., 2010), it has also grown in popularity as a means of delivering a range of mobile payment choices, such as credit and debit cards, digital and mobile wallets, electronic currency, and contactless payment methods, among others (Bezovski, Z. 2016). Consequently, mobile payments are defined as payments for products, services, and bills made with a mobile device using wireless and other communication technologies (Dahlberg et al., 2015). Mobile payment services are predicted to grow from US\$11.7 billion in 2005 to US\$37.1 billion in 2008, according to (Arthur D. Little 2004). In addition, a recent study by Rupashree et al. (2022) shows that the use of mobile payment has increased dramatically, resulting in increased profitability for Indian businesses.

In the case of the Philippines, the use of digital technologies is still below as the country's digital adoption is still behind compared with ASEAN neighbors (The World Bank, 2020). Consequently, Internet penetration in the Philippines stood at 67.0% as of January 2021, according to DataReportal (2021). Given the increased importance of internet connectivity to keep up with the growing demands of contactless transactions, the Philippine government invests

in digital infrastructure development through the deployment of fiber optic cables and wireless technologies, particularly in remote areas (Business World, 2021).

Cash payment remains the dominant payment method, especially for unbanked Filipinos, low-income families, and the elderly. As a result, there is a divide between those with and without the Internet in the Philippines in that about 60% of households still need access to the Internet and cannot experience the benefits of digitalization in the payment system. This resulted in face-to-face interactions, analog practices, and continuous dependency on cash and cheque modes of payments (The World Bank 2020). Furthermore, over 51 million, or 71 percent of Filipino adults, remain unbanked, a primary indicator of financial inclusion and the essential tool to make digital transactions. This is due to insufficient money, lack of documentary requirements and refusal to open a bank account (BSP, 2019). This is understandable, as widespread poverty hampers bank ownership in the Philippines. NEDA stated that the poverty rate is projected to average between 15.5% and 17.5% in 2021, far from the 14% poverty rate targeted by 2022 for the Philippines to be classified as a middle-income country. NEDA also noted that joblessness would remain at around 7% to 9% by 2022 (2021).

Despite cash payment being the dominant mode of payment in the Philippines, cashless transactions are still on the rise because of the popularity of internet purchasing among young, urban Filipinos (Nair, 2016). Moreover, according to Visa (2016), six out of ten Filipino consumers are open to contactless payment methods because of the convenience, safety, and increased access to more products everywhere. A similar study by PayPal (2020) shows that Filipinos are ready to engage in cashless purchases since 87 percent of Filipinos had increased their use of digital payments during the pandemic, and 90 percent preferred digital payments.

The COVID-19 pandemic also greatly impacted companies in shifting to digital business and adopting digital payment systems to resume business operations (Acopiado, Sarmiento, Romo, Acuña, Traje, Wahing, 2022). Diokno (2020) also stated that the COVID-19 pandemic brought a surge in the use of digital platforms for financial transactions and that the Bangko Sentral ng Pilipinas (BSP) is targeting at least 50% of the retail payment transactions will shift to digital payment system by 2023.

The Philippines remained confident that the government is ready to transform the Philippines into a "cashless" society through the digital transformation initiatives of BSP, which has been actively promoting the digitalization of payments and financial inclusion for a long time. Furthermore, digital literacy has long been a priority of the Philippine Government, but it has yet to be systematically implemented or fully institutionalized. Despite various initiatives, digital literacy still needs to be improved. Lack of awareness of making digital payments was cited among the challenges of cashless transactions (BSP, 2019)

According to the study by Rahadia, Nainggolana, Afgania, Yuslizab, Faezahb, Ramayah, Saputrab, Muhammadb, Farooq, and Angelinaa (2021) using the UTAUT model, facilitating conditions, performance expectancy, and social influence directly affect the actual usage of e-payment. However, these scholars used Generation X in Malaysia as their primary concern, and the use of mobile payment among Millennials needs to be explored in the said study. Not to mention, Millennials makeup one-third of the population in the Philippines alone and already make up a larger share of the labor force. According to a survey by the Philippines Statistics Authority, Millennials between the ages of 15 and 34 made up close to half of the workforce in the Philippines in 2015 (Cullimore, 2015). Furthermore, more research on this subject needs to be published in the Philippines. Hence, to address the limitation in the literature, this study aims

to investigate the acceptance of the use of mobile payment among Millennials, specifically in Makati City, Philippines, and determine their behavior to continue using mobile payment systems using the UTAUT model.

Review of Related Literature

1. Performance Expectancy and Actual Usage of Mobile Payment

Performance expectancy played an essential role in shifting to cashless payment transactions. Patil, Dwivedi & Rana (2017) and Chawla & Joshi (2020) also believed using mobile wallets would enhance user performance and benefit user financial transactions.

According to scholars Venkatesh, Thong, and Xu (2012), performance expectancy is the primary driver to use intentions and behaviors. Additionally, in the study of Rahadia et al. (2022), they confirmed that performance expectancy influences the actual usage of e-payment. Ghalandari (2012) further concluded that performance expectancy positively influences the behavioral intention of the people in Iran who are motivated to use e-banking services and that through this type of service, users feel an improvement in their performance.

2. Effort Expectancy and Actual Usage of Mobile Payment

According to the study of Gupta and Arora (2019) using the UTAUT model, effortlessness for users is important in the behavioral intention to accept and adopt mobile payment systems in the National Capital Region of India. Rahadia et al. (2022) support, based on their study, that transaction efficiency is enhanced through e-payments. Additionally, Ghalandari (2012) mentioned that effort expectancy positively and significantly affected users' behavioral intentions.

3. Social Influence and Actual Usage of Mobile Payment

Social influence on the consumer significantly impacts switching to cashless payment systems (Rahman, Ismail, and Bahri, 2020). Celebrities, family members, friends, and colleagues may influence someone to adapt to cashless payments (Rahman, Ismail, and Bahri, 2020). In addition, according to Peng, Yang, Cao, Yu, and Xie (2015), a user's social influence in a mobile social network is significantly important to help provide important insights into the design of platforms and applications. It can be seen that the contribution of social influence affects the decision-making process of a person (Cho & Chan, 2019).

4. Facilitating Conditions and Actual Usage of Mobile Payment

Facilitating condition is the degree to which a person believes that the current organizational and technical infrastructure can support the use of technology (Chan et al., 2010). Additionally, Khechine et al. (2020) explained that when using a system, facilitating condition is the learning support perceived by other people, organizations, and technical facilities. In the literature of Almazroa and Gulliver (2018), the facilitating condition impacts the long-term intention to use mobile payment systems. Research by Rahi et al. (2018) found that facilitating condition is a predictor of the ease of use of internet banking. Scholars, Alalwan, Dwivedi, and Rana (2017) discovered that users are more into e-payment if they have a certain level of service and competence and if they see an e-payment as being consistent with a specific technology already used. Theoretically, those objective elements directly impact the intention to adopt information technology resources.

Furthermore, UTAUT suggested that perceived facilitating conditions strongly influence the acceptance of any new technology (Thakur & Srivastava, 2014). Individuals will be more willing to embrace technologies if more aiding conditions exist to encourage their use (I am,

Hong & Kang, 2011; Oliveiraa, Fariaa, Thomas & Popovica, 2014). The influence of boosting requirements on end-user e-payment usage can be further deconstructed into aspects that have the same purpose of accessing the connection between an individual's working style and the use of a system in an organization, according to (Keong, Ramayah, Kurnia, and Chiun 2012).

5. Actual Usage and Continuance Intention of Mobile Payment

A real behavior in adopting a technology system is actual system usage. Actual system usage is defined by Davis (1989) as a type of external psychomotor reaction measured by a person who has used the system in the past. Actual usage is determined by repeated and more regular use, like in the case of e-commerce, according to Rigopoulos and Askounis (2007). Individuals must utilize an information system to establish whether their intentions to use an information system in the future are high or low, as per Huang (2020). Abrazhevich (2018) found that a consumer's perception of e-payment significantly impacts its actual use and that this is dependent on the consumer's attitude.

According to (Eastin, 2002), the technology's viability in terms of security, confidence, and efficiency will influence a user's decision to adopt e-payment. Based on the study, previous use of information technology had a substantial impact on consumers' use of e-payment because they had already experienced it. If an operating system encourages e-payments, actual usage will improve, leading to a continued acceptance of e-payments (Oliveira, Thomas, Baptista & Campos, 2017; Tella & Olasina, 2014).

Framework

The UTAUT was drawn upon to examine and explain the mobile payment use among millennials in Makati. This model proposes that four constructs impact behavioral intention and actual use of technology. These are performance expectancy (i.e., the degree to which the

technology is perceived to be useful), effort expectancy (i.e., the degree to which using the technology is perceived to be easy to use), social influence (i.e., the degree to which using the technology is appreciated in the individual's social network), and facilitating conditions (i.e., the degree to which the individual believes to have the resources to use the technology) (Venkatesh et al., 2003).

According to the UTAUT model, four core constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) are direct predictors of behavioral intention and behavior. (Venkatesh et al., 2003). It is argued that by examining the presence of each of these constructs in a 'real world' environment, researchers and practitioners will be able to assess an individual's intention to use a specific system, thus allowing for the identification of the key influences on acceptance in any given context. This current study adapted UTAUT model constructs and definitions to millennials' technology acceptance and use. The following section deals with hypothesis formulation, using the UTAUT as a theoretical perspective to construct arguments, and proposes several hypotheses to be empirically tested.

Using the UTAUT model, the researchers hypothesized that:

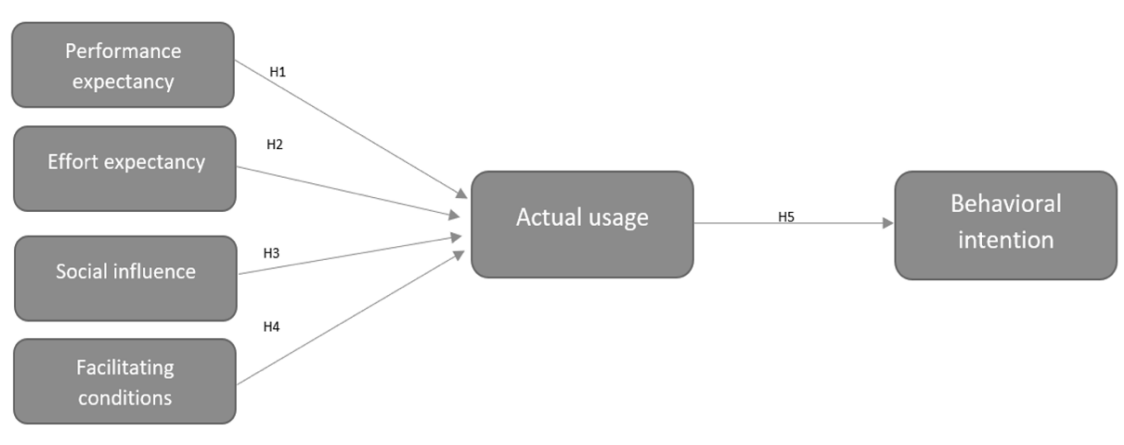
H1: Performance expectancy significantly influences the actual usage of mobile payment.

H2: Effort expectancy significantly influences the actual usage of mobile payment.

H3: Social influence significantly influences the actual usage of mobile payment.

H4: Facilitating conditions significantly influence the actual usage of mobile payment.

H5: Actual usage significantly influences the behavioral intention to continue using mobile payment.

Figure 1*Conceptual Framework***Methodology**

The survey questionnaire was adapted from previous studies. Four questions each for Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and Actual Usage were based on Gupta and Aurora (2019), while three questions for Behavioral intention were adopted from Venkatesh, Thong, and Xu (2012). The five-point Likert scale was used to rate the survey questionnaire with a range of 1, representing strongly disagree, and 5, representing strongly agree. Cronbach's alpha values were calculated to see if questions from previous studies could fit our study, and the result was valid. Snowball sampling was used to distribute the questionnaires via Google Forms through social media. Respondents must be millennials (born 1981-1996), living or working in Makati, and using mobile payment. The Partial Least Square - Structural Equation Modeling (PLS-SEM) via Smart PLS was used to analyze the collected data and determine the impact of each variable on behavior intention

Discussion of Results

The research has gathered 449 respondents. After polishing and cleaning data, there were 386 respondents deemed valid for the study. Table 1 shows the demographic profile characteristics of the respondents. In terms of sex - the majority of the respondents (62.69%) are female, while the other 37.310% are male respondents. Regarding civil status, more than half of the respondents (78.24%) are single, the next 21.50% are married, and the remaining 0.26% are widowed. Lastly, in terms of employment status, almost all respondents (90.67%) are employed. 4.92% are self-employed, 3.11% are students, and 1.30% are unemployed.

Table 1

Summary of Respondents

Demographic Profile Characteristics	n = 386	
	f	%
Sex (n, %)		
Female	242	62.69%
Male	144	37.31%
Civil status (n, %)		
Single	302	78.24%
Married	83	21.50%
Widowed	1	0.26%
Separated	0	0.00%
Employment Status (n, %)		
Student	12	3.11%
Employed	350	90.67%
Self-Employed	19	4.92%
Unemployed	5	1.30%

In terms of the construct's reliability, Cronbach's Alpha, with a value ranging between 0.621 and 0.787, is greater than the 0.6 boundaries (Chuchill, 1979, as cited by Ly, Khuong, and Son, 2022). The Composite Reliability (CR), according to Nunnally (1978), should have a value greater than 0.7, while the Average Variance Extracted (AVE) should be more than 50% (Fornell

& Larcker, 1981). Applying these measurements, all constructs are satisfactory, as presented in Table 2.

Table 2

Cronbach's Alpha, CR, and AVE

Variables	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
PE	0.894	0.926	0.758
EE	0.925	0.947	0.818
SI	0.887	0.922	0.747
FC	0.871	0.914	0.729
AU	0.698	0.804	0.528
BI	0.88	0.926	0.807

Note. Performance Expectancy (PE); Effort Expectancy (EE); Social Influence (SI); Facilitating Condition (FC); Actual Usage (AU); Behavioral Intention (BI).

After validating the constructs, hypothesis testing was carried out using a 5% significance level and boot-strapping run through the Smart PLS software. The generated T-statistics and P-values were used as references to determine whether the hypotheses were supported, as shown in Table 3.

Analysis of the data shows that PE ($t=1.975, p<0.05$), SI ($t=5.981, p<0.05$) and FC ($t=3.042, p<0.05$) positively influence AU, which support H1, H3, H4 respectively. However, EE ($t=1.314, p>0.05$) shows no significant relationship with AU, thus not supporting the H2. Meanwhile, for AU ($t=22.938, p<0.05$), the result shows significance with BIC, which supports the H5.

Table 3*Hypothesis Testing*

Hypotheses	Variables	T Statistics	<i>p</i> Values	Remarks
H1	PE->AU	1.975	0.049	Supported
H2	EE->AU	1.314	0.189	Not Supported
H3	SI->AU	5.981	0	Supported
H4	FC->AU	3.042	0.002	Supported
H5	AU->BI	22.938	0	Supported

Note. The level of significance is 0.05.

For Millennials, performance expectancy proved significant towards the actual usage and a predictor of the behavioral intention to continue the usage of mobile payment systems, which is consistent in the studies of Patil, Dwivedi & Rana (2017), Rahadia et al. (2022) and Ghalandari (2012). Venkatesh, Thong, and Xu (2012) also stated in their study that performance expectancy is the primary driver to use intentions and behaviors. Effort expectancy surprisingly showed no significant relationship with the actual usage of mobile payment systems and cannot be used as a predictor to continue usage. This contradicts the study of Gupta and Arora (2019) and Ghalandari (2012) with the UTAUT model as their framework. However, recent studies by Valencia, Bautista Jr. & Jeong (2021) and Ly, Khuong & Son (2022) support the result of this study. Rahadi et al. (2022) explained in their literature that its significance is lost when effort expectancy is investigated together with other variables. Social influence having significance on the behavior of millennials to use mobile payment systems is consistent in the studies of Ghalandari (2012) and Rahadi et al. (2022). Facilitating conditions are significant to the actual usage of mobile payment, which is also true based on the study of Almazroa and Gulliver (2018), where they stated that facilitating conditions affect the long-term intention to use mobile payment systems. Lastly, findings confirmed that the actual usage is significantly associated with

the intention of millennials to continue the usage of mobile payments in the future, which is evident in the study of Rahadi et al. (2022).

Conclusions

The findings in this study determined that the actual use of mobile payment systems is influenced by performance expectancy, social influence, and facilitating factors. However, effort expectancy did not significantly influence actual usage. Additionally, a strong correlation exists between actual usage and millennials' plans to use mobile payment services.

The study can be used in financial and marketing strategies to understand and attract more mobile payment consumers. This is also relevant to the decision-making and policy formulating of the government in strengthening the mobile channels in both private and government institutions in the Philippines. This research can also reference other developing nations in promoting and implementing cashless payment methods.

Limitations and Recommendations for Future Research

Future researchers can add additional depth to the study by broadening the scope to nationwide respondents, as this study is primarily centered in Makati, Philippines. Additionally, it will be interesting to see how Millennials use technology differently in rural and urban areas. Centennials, Baby Boomers, Gen Z, and Gen X can also be examined in the same way Millennials were investigated in this study.

Since participants in this research were surveyed during the COVID-19 pandemic in the year 2022, it will also be fascinating to see if the same results will be found after the pandemic.

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